

February 26, 2007

Mr. Peter J. Luthiger, Manager
Radiation Safety & Environmental Affairs
Rio Algom Mining LLC
P.O. Box 218
Grants, NM 87020

SUBJECT: MODIFICATION TO RIO ALGOM MINING LLC'S POND 3 EROSION
PROTECTION PLAN FOR SOURCE MATERIALS LICENSE SUA-1473
(J00507)

Dear Mr. Luthiger:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the Rio Algom Mining LLC (RAMC) request to modify the Pond 3 Erosion Protection Plan, dated October 17, 2006. The Pond 3 Erosion Protection Plan was previously approved by NRC as part of License Amendment 51 in November 2002. By this submittal, RAMC requested the NRC to approve its elimination of the use of the secondary sand filter layer for the Pond 3 erosion protection design elements. NRC staff completed a Technical Evaluation (Enclosure 1) and has found the submittal acceptable.

If you have any questions, please contact Tom McLaughlin, of my staff at 301-415-5869, or via email, to tgm@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agency-wide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/reading-rm/adams.html>.

Sincerely,
/RA/

Rebecca Tadesse, Branch Chief
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 40-8905
License No.: SUA-1473

Enclosure: Technical Evaluation Report

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Enclosure: Technical Evaluation Report
(CLOSES TAC J00507)

cc: Bruce Law, Rio Algom Mining LLC

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TECHNICAL EVALUATION REPORT
SURFACE WATER HYDROLOGY AND EROSION PROTECTION
RIO ALGOM MINING - AMBROSIA LAKE
REQUEST TO ELIMINATE SAND LAYER

Background

In a letter dated October 17, 2006, Rio Algom Mining Company (RAMC) requested modifications to the filter layers for the Pond 3 erosion protection plan approved in November 2002. The previously-approved filter layers consisted of a primary filter layer (predominantly gravel and smaller rock) placed under the riprap layer, with a secondary filter layer (sand layer) placed under the primary filter layer. RAMC proposes to eliminate the secondary sand filter layer for several riprap locations on the Pond 3 top surface, east slope, and east embankment apron. RAMC indicates that the sand layer is not necessary, due to the low interstitial velocities present in the primary filter.

Technical Evaluation

The need for filters layers beneath a riprap layer (where slopes are not saturated) is based on the size of riprap that will be placed on the surface. If the riprap size is relatively large, the riprap voids will be large, and the flow velocity through these voids could be large enough to erode the underlying soil surface. To prevent this erosion, a filter layer consisting of smaller rock is placed under the riprap layer to provide smaller rock voids and lower velocities at the filter/soil interface.

NUREG-1623 recommends that the flow velocity in the rock voids be limited to less than 0.5 feet per second (fps). NUREG-1623 also suggests that the Leps formula be used to estimate the velocities and the resulting need for filter layers. Using the Leps formula, RAMC calculated the interstitial flow velocity to be 0.42 fps for the primary filter that will be placed on the 20% embankment slopes. Since all other slopes, such as the apron, are less than 20%, the calculated velocity represents a maximum value of flow velocity for the site. It can be seen that the sand layer under the primary filter is not necessary to further reduce the flow velocities. Therefore, based on staff review of the calculations and justifications provided by RAMC and the use of guidance suggested in NUREG-1623, the staff concludes that RAMC's proposal to eliminate the sand layer is acceptable.